DOCUMENT RESUME

ED 273 655 TM 860 504

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TITLE Early Adolescence: A Critical Development Transition?
PUB DATE Apr 86
NOTE 57p.; Paper presented at the Annual Meeting of the American Educational Research Association (67th, San Francisco, CA, April 16-20, 1986).
PUB TYPE Speeches/Conference Papers (150) -- Reports - Research/Technical (143)

EDRS PRICE MF01/PC03 Plus Postage.
DESCRIPTORS Academic Achievement; *Adolescent Development; Adolescents; *Age Differences; Childhood Attitudes; *Cognitive Ability; Developmental Stages; Intermediate Grades; Longitudinal Studies; Middle Class Students; Parent Attitudes; Parent Child Relationship; *Preadolescents; Self Concept; *Sex Differences; Stereotypes
IDENTIFIERS *Puberty

ABSTRACT

A longitudinal study of early adolescents examined gender differences in attitude and behavior, as well as the effects of pubertal change, parental expectations, and parental support. It was hypothesized that sex differences would emerge during preadolescence and that males' and females' rates of change would be significantly different. Subjects included 335 sixth grade boys and girls from predominantly white, middle to upper middle class suburban school districts. The subjects were followed through the eighth grade. Group assessments and individual interviews were conducted twice per year. The variables assessed included family relationships, peer relationships, school participation, self concept, self assessment of pubertal change, gender role identity, attitudes toward women, cognitive ability and development, ego development, and family feelings. Parents were also interviewed. Cognitive performance improved over time for both sexes; however, boys scored higher in spatial ability and formal reasoning and girls in fluent production. School achievement declined over time, related to the transition from one school to another. Pubertal timing (early, average, or late development) was related to school achievement, and pubertal status was related to body image and family relationship. Multivariate analysis of variance indicated that later maturation was associated with better adjustment. Three pages of references and numerous figures are provided. (GDC)

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Early Adolescence:

A Critical Developmental Transition?

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Presentation invited by Division E (Counseling and Human Development) at the annual meeting of the American Educational Research Association in San Francisco, April 16 - 20, 1986.

TM 860 504

Title: "Early Adolescence: A Critical Developmental Transition?"

Presenter: Anne C. Petersen, The Pennsylvania State University

Session: 11.30, 10:30-12:05 Thursday April 15, Sauternes III in the Meridien

Abstract

Research results on adolescents have been in conflict with popular belief for some time now. We believe that adolescents are a troubled and troublesome lot, yet the research consistently demonstrates that this is not so. Most adolescents traverse the second decade of life relatively smoothly. The study providing data for this address focused on a period during which it was thought that normative crisis might exist: the pubertal years of early adolescence. The study also included girls as well as boys, redressing a neglect of girls in previous research.

The findings are consistent with those obtained earlier in older ages: despite the increased change and challenge of the early adolescent years, most young people do well. Furthermore, this period is not a time of divergence between boys and girls; the extant gender differences develop prior to the early adolescent, pubertal years.

These global statements about the findings, however, mask some very important subgroup differences. Indeed, these subgroup differences serve to illuminate the currently discrepant views from the clinical literature and popular belief versus the conclusions from research on normative populations. Although most young people develop in competence and self-image during the early adolescent years, a minority--particularly boys--begin downward patterns of poor achievement, trouble, and despair. For girls, these factors are not linked together in the same way. It is previously high achieving girls who are most susceptible to poor self-image, a state apparently correctable by dropping one's achievement. Therefore, the risk factors in boys are quite different from those for girls;

the implications for programs for young adolescents are likewise different for boys and girls. Although all young adolescents need continued support and structure at this time of life, it is low achieving boys and high achieving girls who most need special attention in order to prevent further, more serious difficulties.

Bio

Dr. Anne Petersen earned the Ph.D., like all her other degrees, at the University of Chicago. Her research has focused on the development of gender differences, particularly in adolescence. She is known for her contributions in both areas, as exemplified by her books: Sex-Related Differences in Cognitive Functioning: Developmental Issues with M. Wittig (Academic Press, 1979), Promoting Adolescent Health: A Dialog on Research and Practice (Academic Press, 1982), Girls at Puberty with J. Brooks-Gunn (Plenum, 1983), and Adolescence and Youth with J. Conger (Harper & Row, 1984). She also has published more than 100 articles and chapters on adolescent development and gender differences. She is currently Professor of Human Development and Head of the Department of Individual and Family Studies at The Pennsylvania State University.

We began our studies of adolescent development in the late 1970s, just after the period of "youth unrest," in which there was a great deal of interest in adolescents. The view of adolescents, however, was--and still is--a decidedly negative one (Slide 1). This popular belief of troubled and troublesome teens stood in distinct contrast to the research just coming out. This research (e.g., Offer & Offer, 1975) suggested that most adolescents traverse the period without turmoil. A major retort to the research that had been done, however, was that it only focused on adolescents beginning with the high school years. The early adolescent years--because of puberty--were thought to be more critical, both as a time of increased turmoil and in setting the stage for development throughout adolescence. This earlier generation of research was also criticized because very few studies had included girls. We stepped into this breach and proposed to investigate the early adolescent years, involving the transition from childhood into adolescence.

The concept of a transition in development is very interesting scientifically and has great potential import in terms of developmental, social, and psychological problems. A developmental transition may be defined as a period of the life span in which there is, for most if not all individuals, significant change in several aspects of development providing at least the potential for shifts in developmental patterns.

THE AGE OF INSOLENCE: THOSE TERRIBLE TEENS
By Robert Coles
Side 1

Such transitions, then, provide a window through which to examine developmental process, in order to understand what happens normatively and why. Developmental transitions have practical as well as scientific importance since individuals may be more susceptible to intervention during periods of change. In addition, there is evidence that developmental transitions may challenge the individuals' coping resources, serving to stimulate and strengthen some individuals while rendering others more vulnerable, or totally overwhelming yet others. The latter group may, therefore, be at great risk for problems and be appropriate participants in supportive interventions.

The idea that early adolescence represents a critical developmental transition in the life span was first proposed by Hamburg in 1974. She drew together various lines of evidence suggesting that development prior to this phase was in many ways disjunctive from development after this period. She pointed to the various changes that occur at this time and proposed several hypotheses to be examined. A similar, and more extensive, review of research and programs for young people of this age by Joan Lipsitz, published in 1977, also highlighted the relative dearth of knowledge on this age group.

What I hope to do today is to develop the theoretical arguments for why developmental transitions in general, and this one in particular, are important to consider. I will present data from my longitudinal study of early adolescent development to support the argument that this <u>is</u> a critical developmental transition but also to indicate the areas in which development is more continuous and less disjunctive. I will also discuss the implications of this developmental period for interventions and counseling.

The concept of disjunctions in development over the life-span goes back at least to the writings of the anthropologist Ruth Benedict (1954). She was referring particularly to American culture in identifying the developmental disjunctions we create during adolescence, especially when compared with other societies and cultures. Benedict's perspective is particularly important as it draws our attention beyond the salient and culturally universal biological changes of puberty to culturally specific social arrangements during adolescence. One social arrangement in our society that is highly important for the transition at early adolescence is the very dramatic change in school structure and format at this time. Most children in the United States move from a small neighborhood-based elementary school with a primary teacher and a single group of classmates to a larger, more anonymous school setting involving, for each student, several teachers, several groups of classmates, and a more demanding set of expectations.

Change during early adolescence is not restricted, however, to puberty and school change. There is change in every aspect of individual development and in every social context important to development at this age. Some of these changes are shown in the next slide (Slide 2). Although biological change is often the first change experienced by most adolescents, particularly girls, the primacy of biological change at this period presumably has influenced the tendency to overattribute behavior at this age to biological change. We typically have a rather negative view of the entry into adolescence, as is demonstrated in the next slides (Slides 3 and 4). The perceived negative changes in the behavior of young adolescents are typically attributed to puberty, or more specifically, to hormones. What has been

Slide 2

Developmental Stresses of Adolescence

Puberty	adult appearance and size
	reproductive capacity
	timing (especially if deviant)
	internal endocrine changes
	asynchrony (among body parts, among adolescents)
Cognitive	capacity for abstract thought
Peer Groups	conformity
	pressure to try new experiences
School	changing school structure and format
Parents	parental responses to adult size of adolescent
	sexual stimulation
	implications for parent's aging
	impending separation
Society	hopes and expectations for youth
	occupational choices and opportunities

SO YOUR CHILD HAS ENTERED ADOLESCENCE...

Slide 4

IT'S ENOUGH TO CHANGE YOUR MIND
ABOUT CAPITAL PUNISHMENT.

ignored are the very many other changes in the lives of young people at this time. From the stressful life events perspective, researchers have found that experiencing several changes at once produces predictable psychological and social effects. Although adolescent development has not typically been viewed from this perspective, I believe that greater understanding of behavior at this age can be achieved through examining the extent and effects of changes.

In addition to my interest in developmental process and the effects of change, I was quite interested in examining the developmental transition at early adolescence because of the several lines of evidence suggesting that the development of boys and girls diverged at this time. Researchers of mental health have noted that boys are more frequently identified as having difficulties in childhood whereas girls begin to have more difficulties than boys in adolescence (e.g., Rutter, 1980). Therefore, early adolescence seemed implicated in this shift in gender ratios of psychological and behavioral problems. In their major review of research on sex differences, Maccoby and Jacklin (1974) concluded that most of the constructs showing gender differences first manifested them in early adolescence. Puberty and related effects on gender identity and socialization were the explanations most frequently advanced for emergence of sex differences at this time. Finally, Hill and Lynch (1983) proposed a very interesting hypothesis about gender intensification in early adolescence. They posited that because of pubertal changes leading young people to look more like adult versions of their gender, young adolescents tend to overidentify with stereotypes for gender-appropriate appearance and behavior, prior to developing their own, more individuated identities. These inferences and

hypotheses all propose that boys and girls begin to differ in feelings and behavior at the time of pubertal change.

The hypotheses for our longitudinal study of early adolescence, then, were that differences in male and female attitudes and behavior would emerge during early adolescence, with pubertal change and parental expectations and support as major factors producing divergence. In statistical terms, this meant that we were looking for interactions in longitudinal patterns of change by gender; that is, we hypothesized that the rates of change would be significantly different for boys and girls.

Design of the Early Adolescent Study

In this research we utilized a cohort-sequential longitudinal design (Baltes, 1986; Schaie, 1965) (Slide 5). Although two successive grade cohorts were sampled, we did not expect to see significant cohort change; rather, we expected that one cohort could serve as a replicate of the other.

We randomly sampled 335 youngsters from sixth-grade classrooms in two suburban, predominantly white, middle to upper middle class school districts (Slide 6). About 20% of those we contacted initially either refused to participate or failed to return consent forms; these rates did not differ by school or school district. We followed the sample from sixth grade through eighth grade, and are currently conducting a follow-up study of these youngsters in their senior year of high school. Over the early adolescent phase of the research, four percent of the families moved and another six percent dropped out of the study. Further information on the demographic characteristics of this sample may be found in a 1983 special issue of Journal of Early Adolescence, especially in an article by Richardson and others (1984).

Slide 5

			Grade		
			6	7	8
Cohort	I	(1967)	1979	1980	1981
(Year of Birth)	II	(1968)	1980	1981	1982

Fig. 1. Cohort-sequential longitudinal design for the study. All entries indicate year of testing.

Slide 6

EARLY ADOLESCENT DEVELOPMENT STUDY

Biological, Psychological, Social Aspects

° Cohort Sequential Longitudinal Design

° Random Sample

° Two 6th Grade Cohorts

I - 85 Boys, 103 Girls

II - 68 Boys, 79 Girls

335 Total

The assessment design involved twice annual group assessments and twice annual individual interviews (Slide 7). The same interviewer conducted all of the early adolescent interviews with each individual child. The interviews consisted of both structured and semistructured questions and focused on family relationships, peer relationships, school participation, and areas of the self, including pubertal change. Constructs assessed in the group setting included self-image, gender role identity, attitudes toward women, cognitive ability and cognitive development, ego development, and family feelings. Parents were interviewed when their children were in sixth and eighth grades (Slide 8). Their interviews and assessments provided comparable information in several areas tapped in the adolescent assessments and served to provide the same information from another perspective. In addition, parents were asked to recollect about their own adolescence. Only selected results will be presented here. The data on cognition and school achievement exemplify those found in some other areas.

Results

Cognition

Three constructs typically showing gender differences were assessed: spatial ability (Primary Mental Abilities Space Relations subtest), fluent production (Differential Aptitudes Test, Clerical Speed and Accuracy subtest), and formal operations (Linn's Equilibrium-in-a-Balance test of proportional reasoning). As can be seen in the next three slides (Slides 9, 10, and 11) performance in all three areas increased over time for both boys and girls and with developmental patterns that are parallel, reflecting no gender divergence. The

Slide 7

Figure 2: Assessments in the Early Adolescent Study

Assessments	Description	Frequency
	For Adolescents	
Interview	Semi-structured; focuses on school, friends, family, and self	Twice annually
Self-Image Questionnaire for Young Adolescents	Nine scales and total score of adjustment	Annually
Cognitive Measures	Formal operations (Linn, Peel); spatial ability (PMA, Water Level, GEFT)	Annually
Sentence Completion Test	Measures state of ego development (Loevinger)	Annually
Sex Role Inventories	Bem Sex Role Inventory; Attitudes Toward Women Scale for Adolescents (Petersen)	Annually
Lowman Inventory of Family Feelings	Measures feelings about family members	6th, 8th grades
School Achievement	Average GPA, standardized achievement and IQ test scores	Obtained once for all three grades

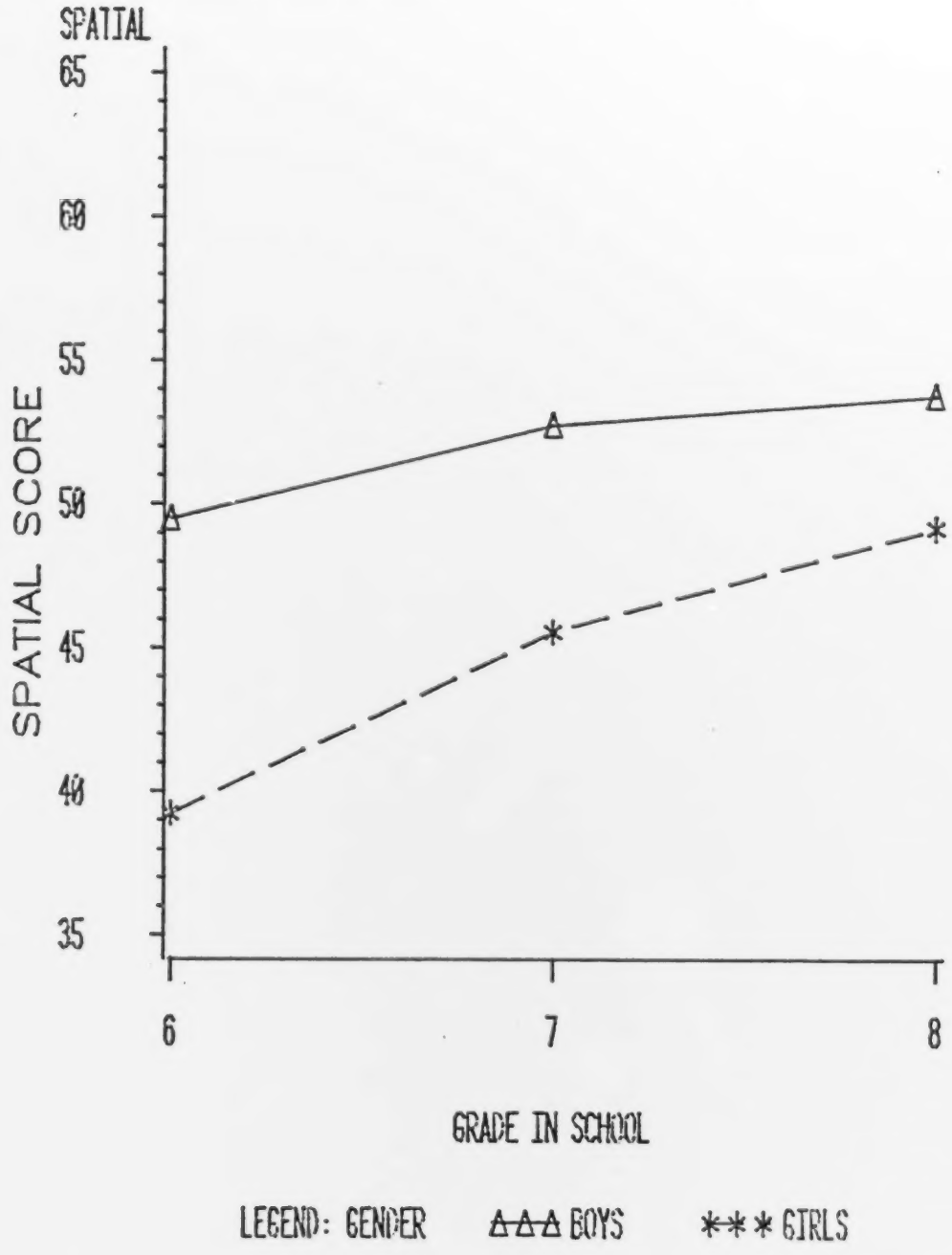
Slide 8

Parent Assessments in the Early Adolescence Study

Assessments	Description	Frequency
Interview	Parallels child interview plus parenting, parent's adolescence	6th, 8th grades
Self-Image Questionnaire for Young Adolescents (Parent Form)	Parent report of child's self-image	6th, 8th grades
Lowman Inventory of Family Feelings	Measures feelings about family members	6th, 8th grades

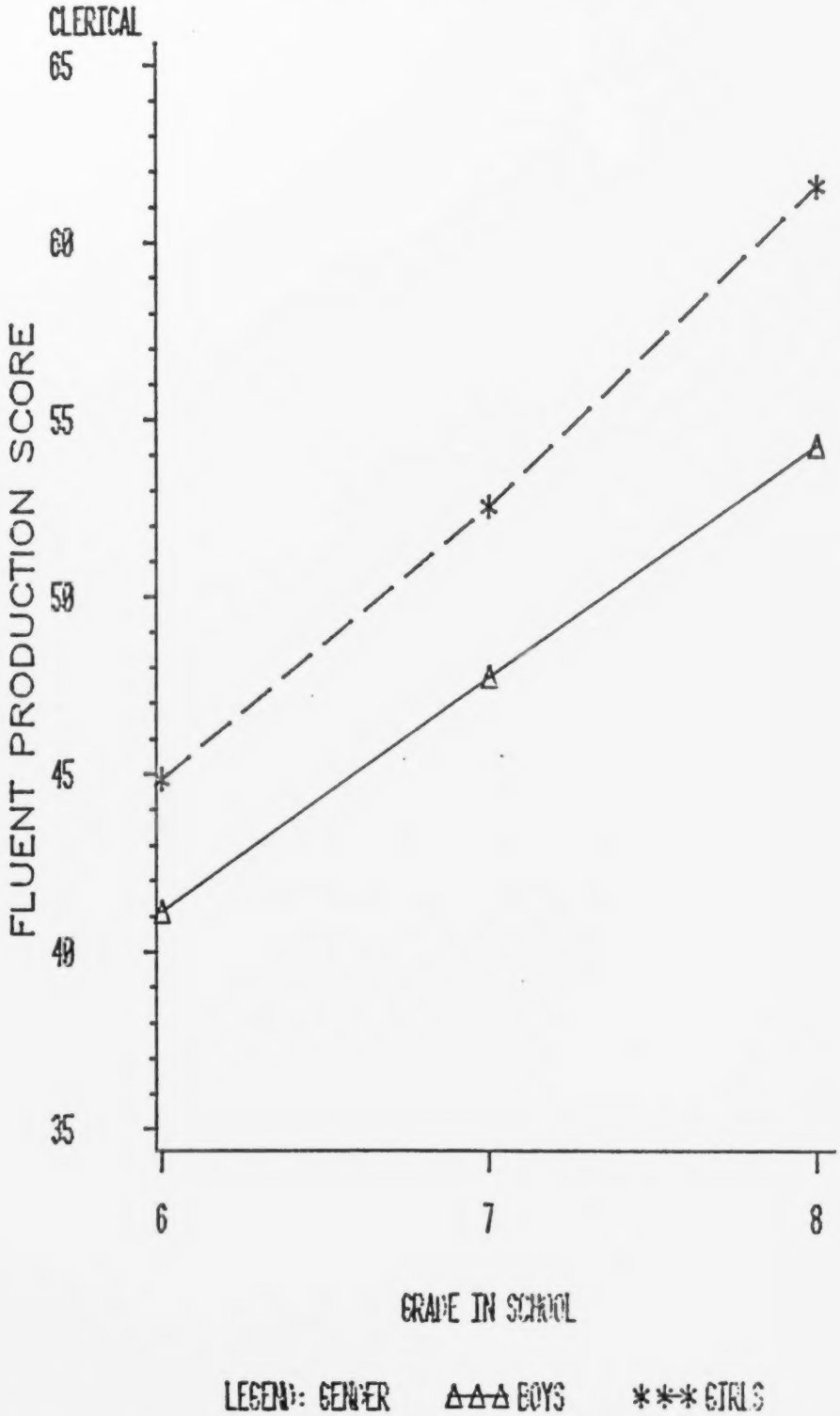
Slide 9

CHANGES IN SPATIAL ABILITY
OVER EARLY ADOLESCENCE



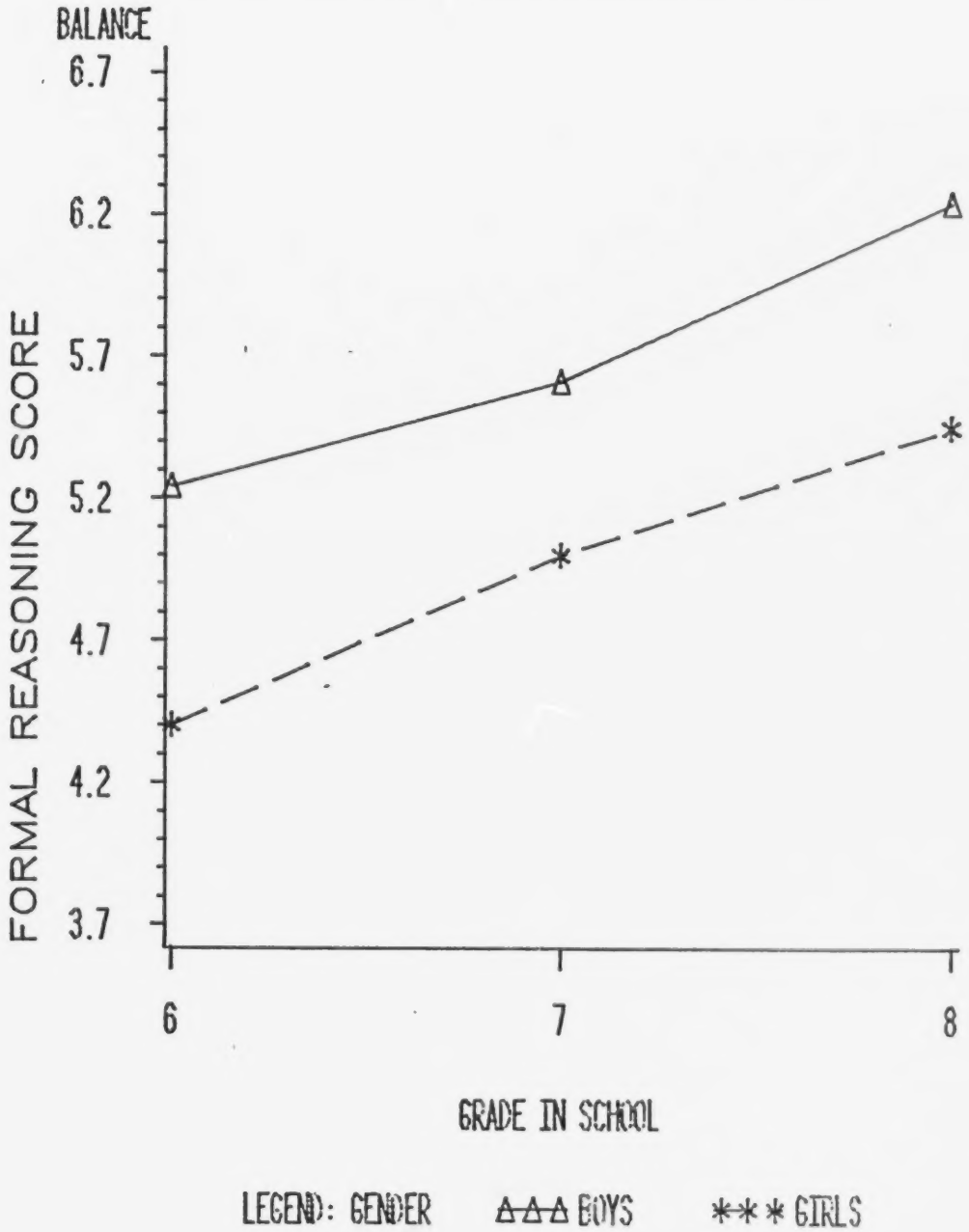
Slide 10

CHANGES IN FLUENT PRODUCTION
OVER EARLY ADOLESCENCE



Slide 11

CHANGES IN FORMAL REASONING OVER EARLY ADOLESCENCE



expected gender differences in level of performance were found, and these are apparent from sixth grade.

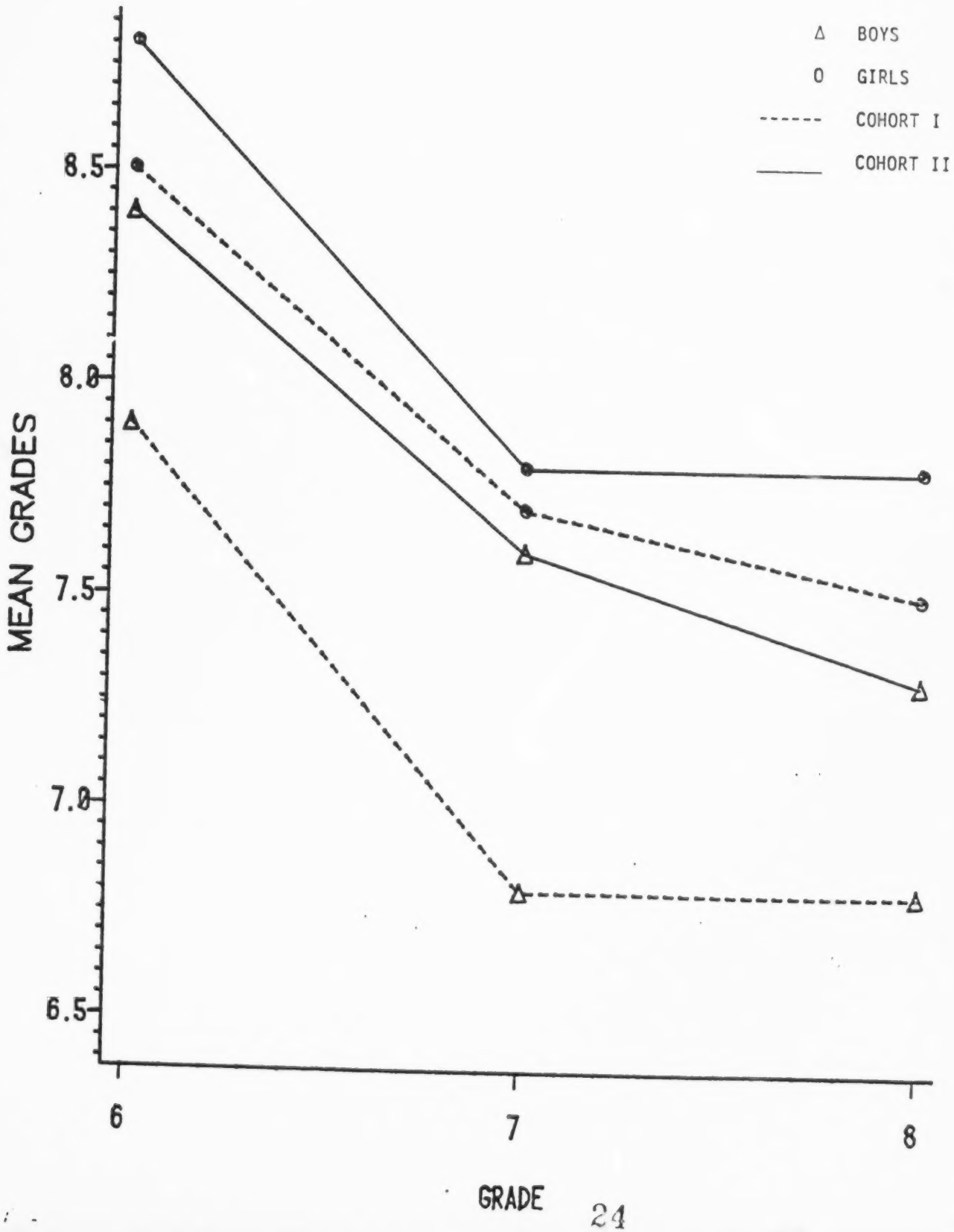
This finding of no gender divergence was one also found recently by Marcia Linn in her research with young adolescents. Our similar results led us to conduct a meta-analysis of studies of spatial ability conducted since the Maccoby and Jacklin review. The results of this meta-analysis were recently published in Child Development (Linn & Petersen, 1985) and demonstrated that with the two spatial constructs that show reliable gender differences--horizontality/verticality and mental rotations--these differences appear as early as the tests have been given, typically prior to early adolescence. All other spatial tasks (accounting for 85% of the studies) showed no reliable gender differences.

School Achievement

In contrast to the developmental increases in cognitive ability, school achievement goes down over this period (Slide 12). School personnel who see this slide prior to the ones I just showed you, assume that declines in school achievement are part of the reputed declines in cognitive competence at this age (e.g., Epstein, 1974). Instead, we infer that these declines are due to increasingly difficult grading practices as youngsters move from elementary to junior high school. The same declines in course grades have been found by Simmons and her colleagues (Simmons et al., 1979), and are seen through the next school transition into senior high school.

We were also able to examine some variations in the nature of school transitions because of a natural experiment produced when one of our school districts changed its structure during the second year of the

Slide 12

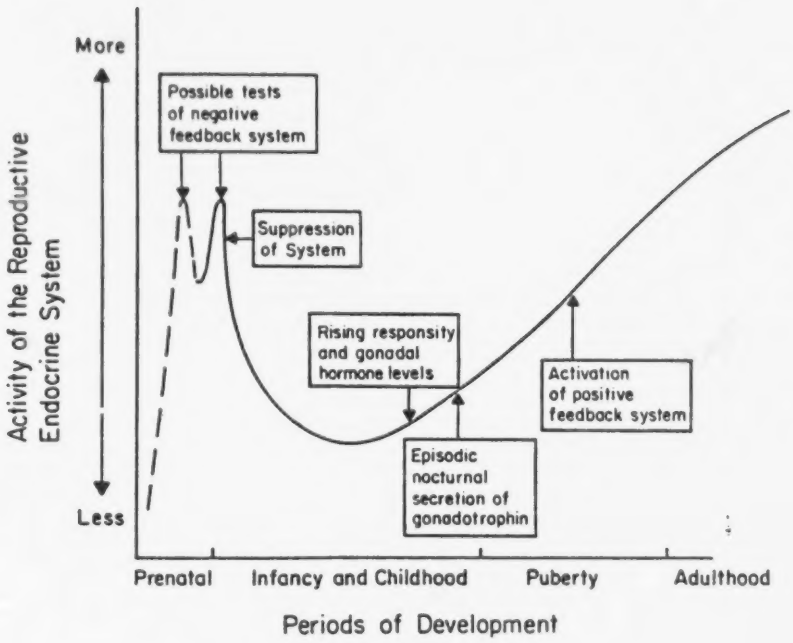

Δ BOYS
O GIRLS
------ COHORT I
——— COHORT II
8.5
8.0
7.5
7.0
6.5
MEAN GRADES
6
7
8
GRADE

study. In one school district, youngsters initially attended two middle schools for the entire sixth through eighth grade period. With Cohort II, they changed one of the middle schools into a seventh and eighth grade junior high school for the entire community, including all children who previously attended the other middle school. Therefore, one group of children changed schools twice, a second group of children changed schools only once but prior to sixth grade, and all the remaining children in that district as well as the other district changed schools between sixth and seventh grades. Comparisons of these groups revealed that making the school transition prior to sixth grade had more negative consequences than changing prior to seventh grade and that changing schools twice was worse than changing schools only once (Schulenberg et al., in preparation). Those who changed schools twice particularly showed depressed grades through the end of eighth grade.

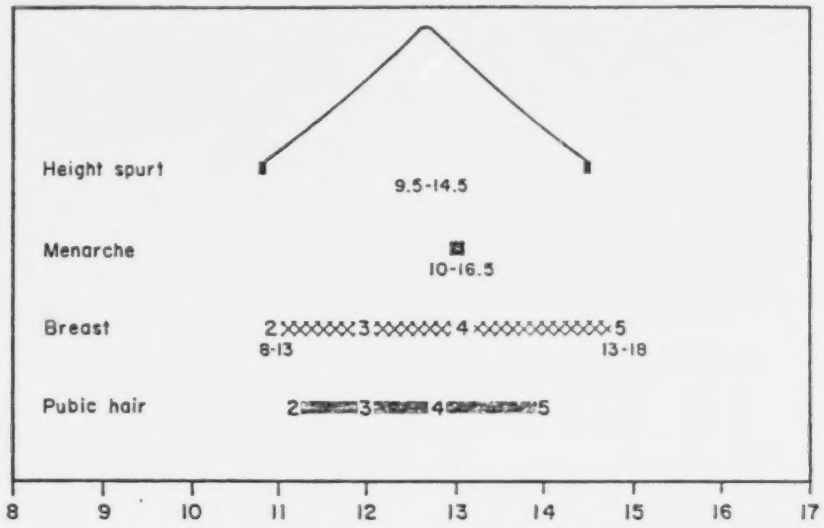
Pubertal Change

As indicated earlier, we identified puberty as a major influence on change during the early adolescent years. Puberty is a rather lengthy process whose endocrine aspects are actually established prenatally (Slide 13). Postnatally, high endocrine levels are suppressed until they are slowly released beginning at about age seven years. These increasing levels of hormones begin to affect somatic characteristics by 11 or 12 years for girls and boys, respectively. The timing of changes in various somatic indicators are shown in the next two slides based on Tanner's data obtained about 20 years ago (Slides 14 and 15). Current data in the United States suggest that all of these events now happen somewhat earlier. For example, the average age at menarche is now about 12½ years.

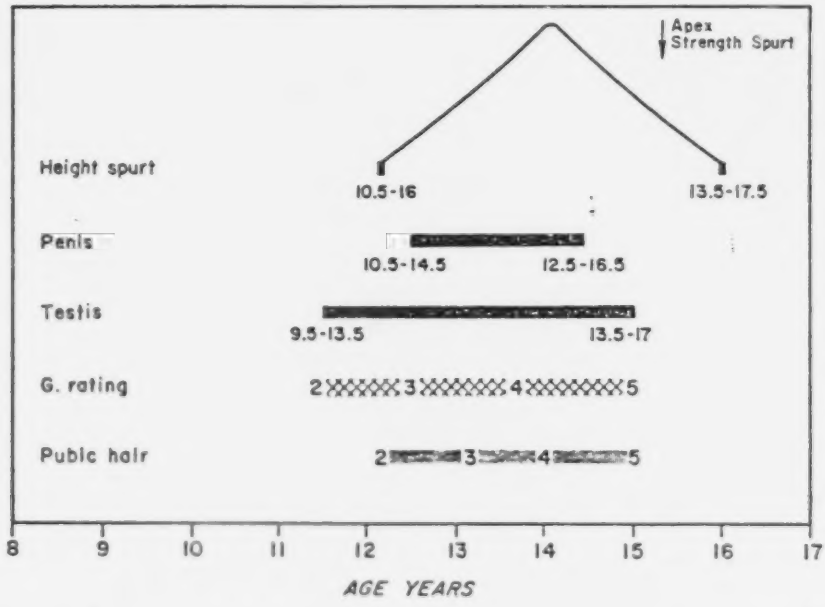
Slide 13


More
Less
Activity of the Reproductive Endocrine System
Possible tests of negative feedback system
Suppression of System
Rising responsity and gonadal hormone levels
Episodic nocturnal secretion of gonadotrophin
Activation of positive feedback system
Prenatal
Infancy and Childhood
Puberty
Adulthood
Periods of Development

Slide 14



Slide 15



In our study we had initially hoped to obtain endocrine measures. This aspect of the research was deleted at the funding level because at that time (1978) there was skepticism about whether valid endocrine data could be obtained other than by 24-hour sampling from an indwelling catheter. Such a procedure would obviously compromise the other goals of this research. We had then hoped to at least obtain ratings of nude children conducted by trained pediatricians according to the sexual maturation scale popularized by Tanner. This aspect of the research was refused at the outset by one school district and refused after a year of lengthy negotiations with the school board and parent groups in the other.

After initial fear that we would have to abandon this entire aspect of the research, we attempted to ask the young adolescents about their pubertal changes. They seemed quite comfortable talking about these changes and were able to rate their own development quite accurately. The next slide (Slide 16) shows the indicators on which we asked young people to rate themselves, using a four-point scale ranging from no growth as yet to growth fully attained. These ratings on five indicators each for boys and girls were then converted into a categorical system ranging from prepubertal to postpubertal with three levels in between. The next two slides (Slides 17 and 18) show the change over time with this categorization of pubertal change. These figures reveal that the self-reports function appropriately; young adolescents are increasingly pubertal over time, with girls about a year ahead of boys.

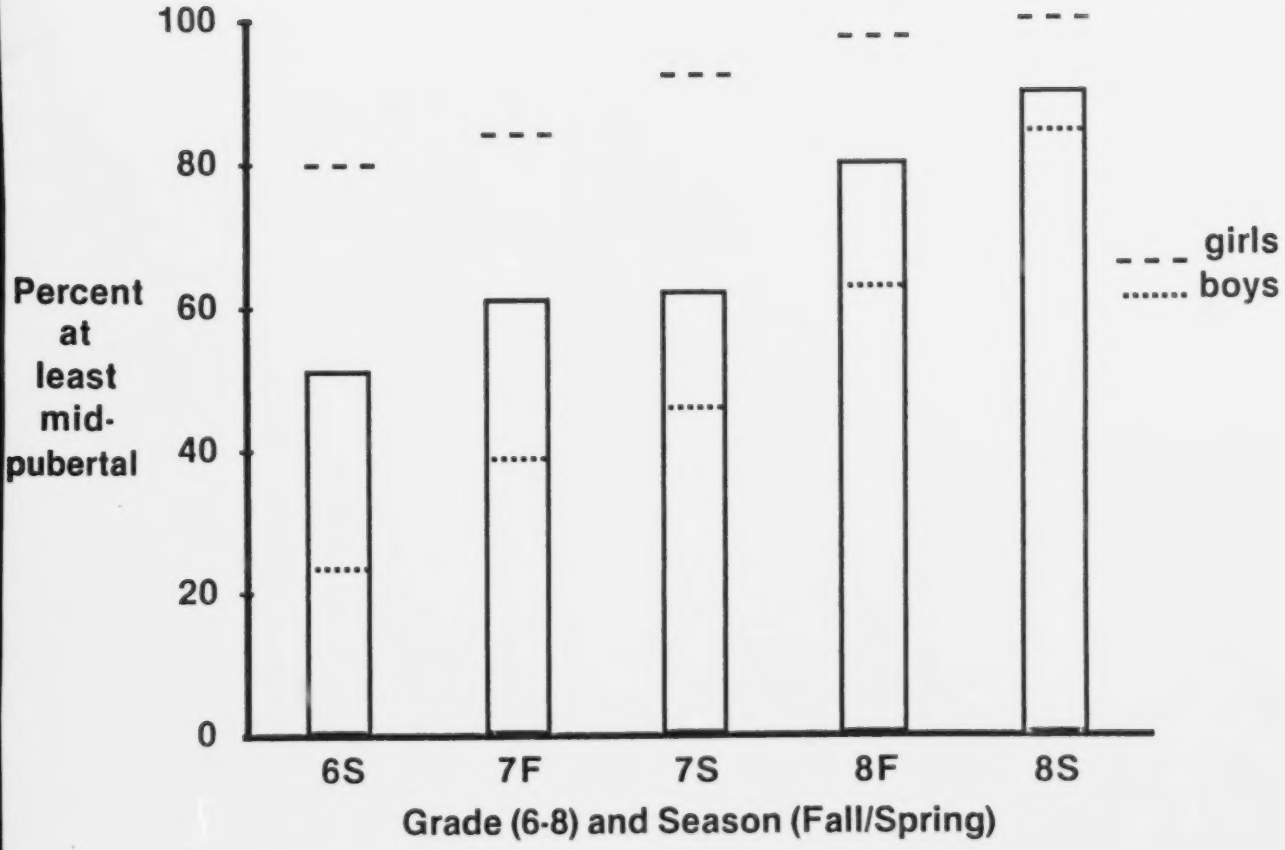
The gender difference in pubertal change is also exemplified in the next slide (Slide 19), which shows the percentage of youngsters who are

Slide 16

PUBERTAL CHANGE ITEMS

	Boys	Girls
Height spurt	X	X
Body hair	X	X
Skin changes	X	X
Facial hair	X	
Voice change	X	
Menarche		X
Breast development		X

Figures 17 and 18 not available in hard copy

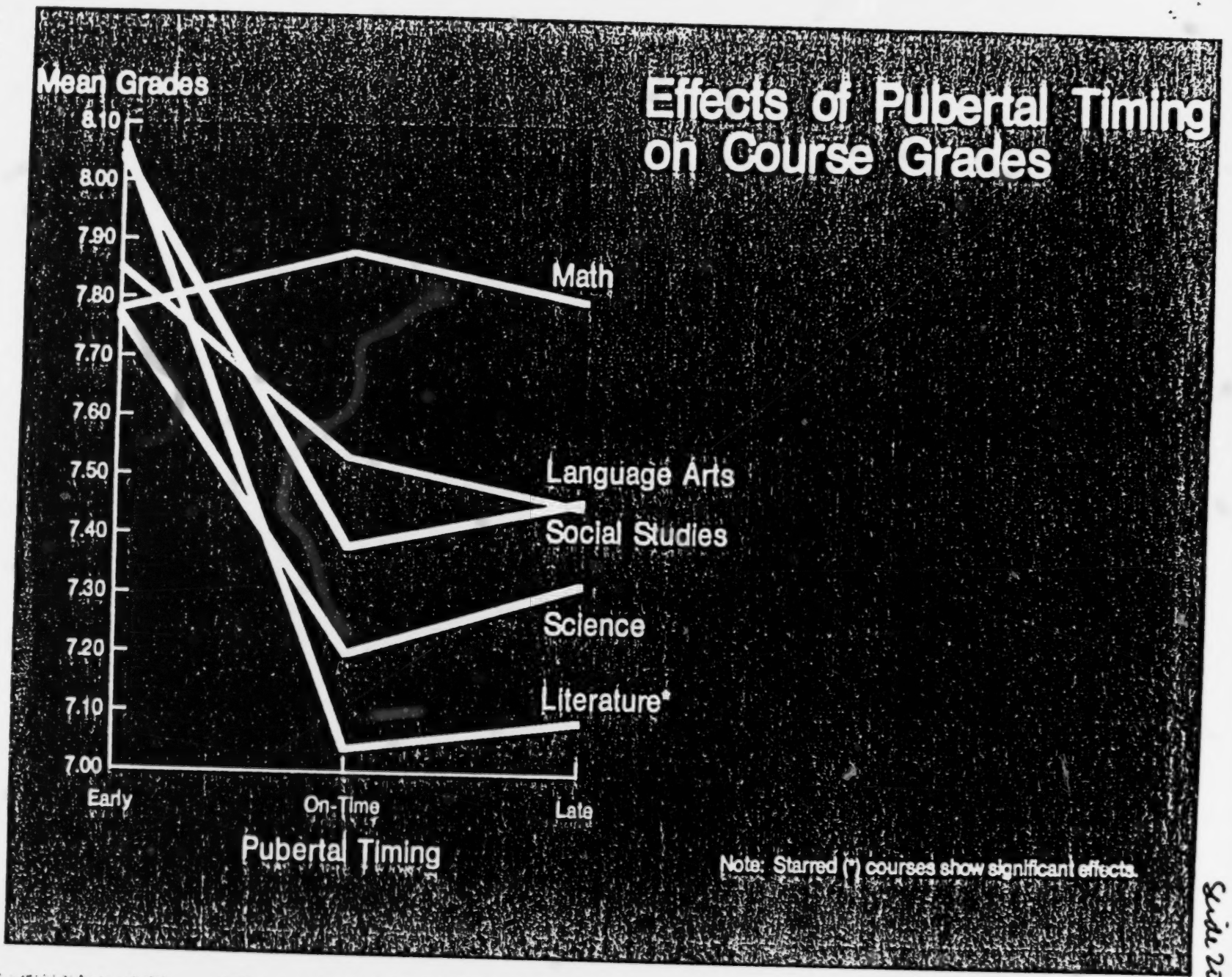

100
80
60
40
20
0
Percent at least mid-pubertal
girls
boys
6S
7F
7S
8F
8S
Grade (6-8) and Season (Fall/Spring)

Slide 19

at least midpubertal--the point by which changes are more visible--over the early adolescent years. As can be seen, substantially more girls than boys have attained this stage at each grade level. A perhaps more important point, however, is that about half of the kids in the entire peer group are pubertal by the spring of sixth grade, a transition point that may be critical for the development of behaviors accompanying pubertal change. Most considerations of puberty fail to recognize the fact that girls and boys are experiencing these changes. Although most boys are not pubertal by the end of sixth grade, or even the beginning of seventh grade, most of the total peer group is pubertal, thus affecting the behavior of all children (Petersen, 1985).

Effects of Pubertal Change on Cognition and Achievement

Since no gender divergence in these constructs was found, it seems unlikely that pubertal change would account for the gender differences. These effects were tested nevertheless with the predictable result: there are no replicated relationships between pubertal status and any cognitive construct or achievement for any of the six time periods examined (fall and spring of sixth through eighth grades) (Crockett & Petersen, in press). Pubertal timing--that is, whether one is an early, on-time, or later developer--was related to school achievement, however. The pubertal timing classification was based upon a trichotomous division of boys and girls in terms of age and peak velocity in height growth. The multivariate effect of pubertal timing was significant, with the only univariate effect appearing for literature grades. This effect is shown in the next slide (Slide 20); as can be seen, the same pattern of relationships is seen with all grades except for mathematics. This pattern suggests that early developers are more likely to get


Effects of Pubertal Timing on Course Grades
Mean Grades
8.10
8.00
7.90
7.80
7.70
7.60
7.50
7.40
7.30
7.20
7.10
7.00
Math
Language Arts
Social Studies
Science
Literature*
Early
On-Time
Late
Pubertal Timing
Note: Starred (*) courses show significant effects.

Slide 20

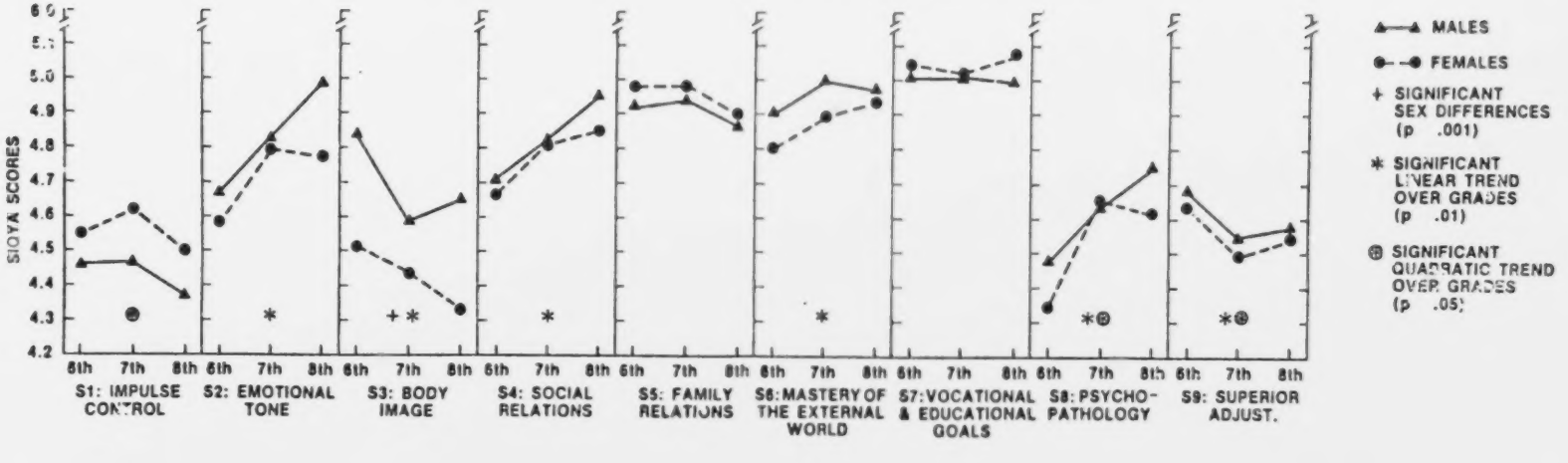
higher grades. This same result has been obtained in some studies (Dornbusch et al., 1981), although not all (e.g., Simmons & Blyth, in press). We suspect that the effect represents a tendency for teachers to rate youngsters who appear more mature as also more competent intellectually, paralleling the general finding that taller individuals are perceived as more competent.

Self-Image

As with cognition and achievement, no gender divergence was seen with self-image (Petersen et al., 1984). Indeed, Body Image is the only scale of the nine self-image scales showing a sex difference in level. The patterns of change on the nine scales are shown in the next slide (Slide 21). The main message of these data is that many different patterns of change are seen, depending upon the scale and the gender. Most of the change, however, is upward, except for Impulse Control, Body Image, and Superior Adjustment. It is interesting to note that identical patterns are seen for the Emotional Tone and Psychopathology scales.

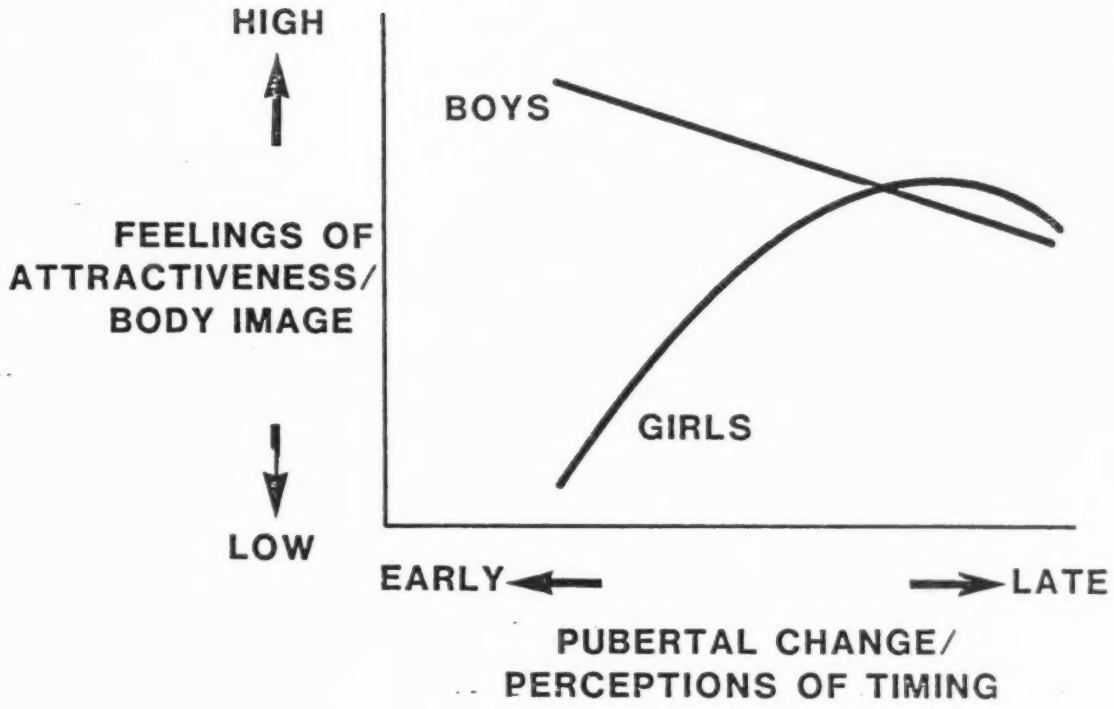
Pubertal status is related to body image, and to Family Relations but only for girls; no other scales were consistently related to pubertal status over time. Body image shows distinct sex differences in its relationship to pubertal status: the body image of boys improves with increasing pubertal status whereas that of girls declines as they mature. This pattern is represented in the next slide (Slide 22), although this slide was based on several findings for seventh graders (Tobin-Richards, Boxer, & Petersen, 1983). As for Family Relations, girls appeared to report increasingly worse relationships with their parents as they matured. Recall that there was no grade-related change

FIGURE 1: SCALE MEANS FOR BOYS AND GIRLS BY GRADE.



Slide 21

Slide 22



Petersen
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45

in Family Relations; therefore, this is an effect of puberty rather than chronological age. Parenthetically, let me note that we find strong associations between increasing pubertal status and heterosocial behavior, for both boys and girls. This result has also been obtained by several others.

Three of these scales, analyzed together in a multivariate analysis of variance for repeated measures, did show pubertal timing effects such that later developers appeared to be the best adjusted (Petersen & Crockett, 1985). This result is shown in the next slide and is similar to that obtained in other recent research (e.g., Brooks-Gunn, 1986; Susman & Inoff-Germain, 1986) (Slide 23). Boys and girls did not differ in this effect. It appears to be consistent with earlier findings of the Berkeley studies in which it was concluded that those whose maturation was a bit later had more time to adjust to all the changes and fared better as a result.

Summary

Many other results could be presented but they all tell the same story. The direction of change over the early adolescent period is typically in an upward direction representing increasing competence. The major exception to this overall finding is with school achievement, an area in which we believe the direction of change is largely controlled by teachers. Gender divergence did not appear, although predictable gender differences in level of functioning were found with all constructs. Since gender divergence was not found, there was nothing for pubertal change to "cause." We did find effects of pubertal status and timing, however, in specific areas such as body image and heterosocial behavior. Nevertheless, in all analyses we found powerful

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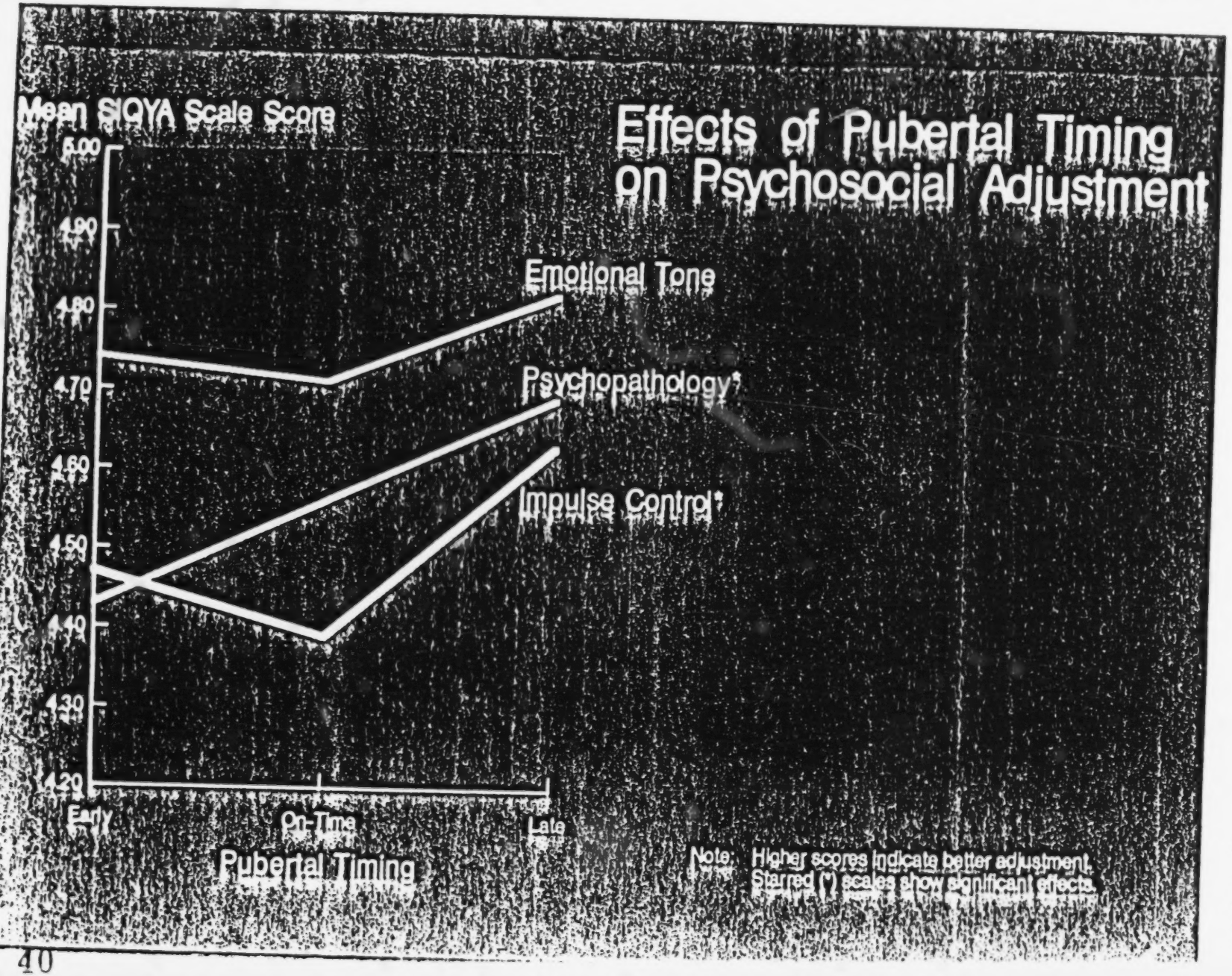


guide23

effects of grade in school, suggesting that more experience is the key factor producing more positive outcomes.

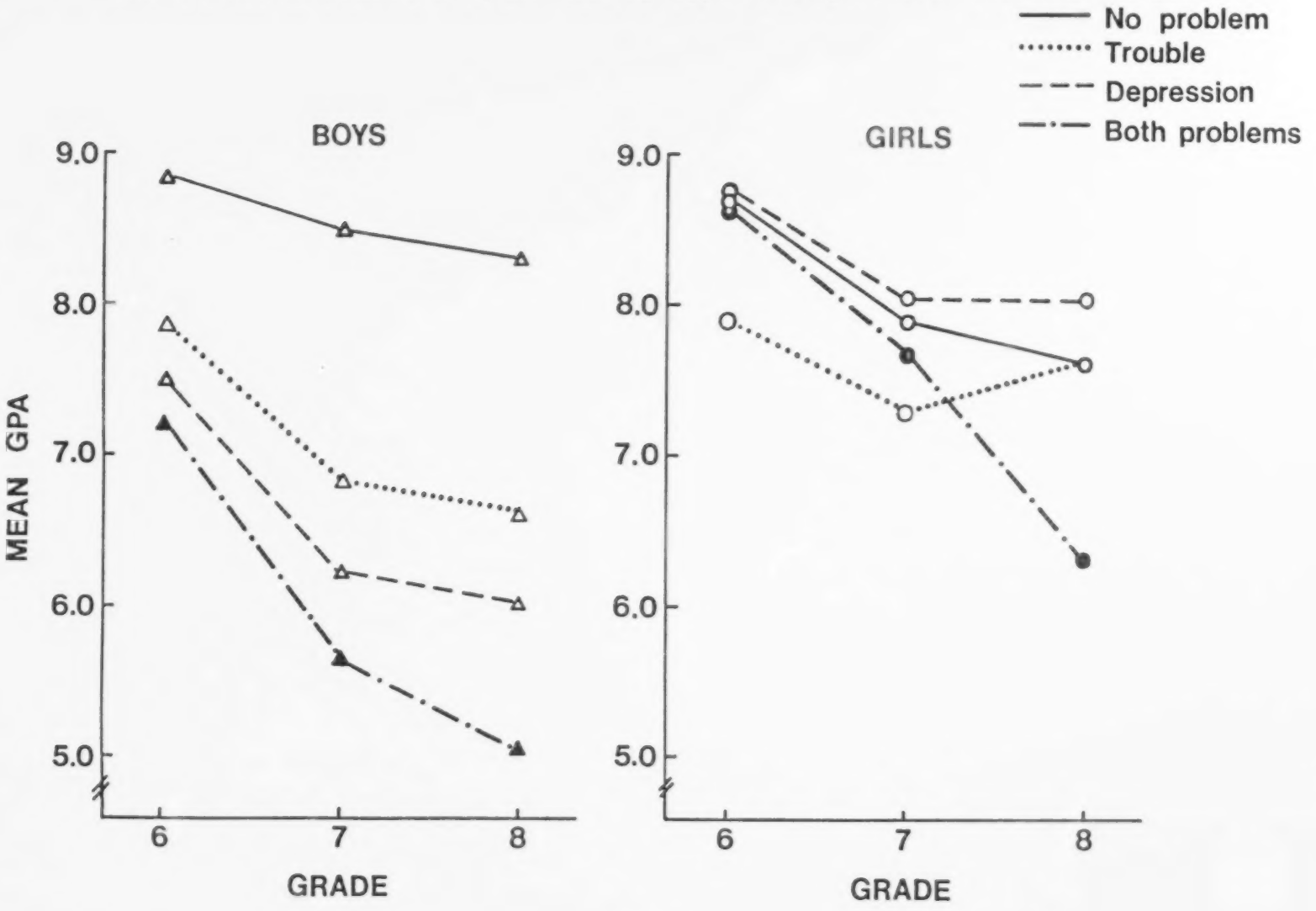
This picture--of increasing competence and no gender divergence--was unsettling to us. Although these findings have been attained in other research as well, they seem to be missing something. We know that not all young people become increasingly competent at this age and we believe that gender differences were developing. More recent analyses have shown that although these results are accurate, they conceal important subgroup variations. We have now begun testing hypotheses about subgroups of individuals; some of our results particularly demonstrate this point.

Depression and Achievement

One of my students, Aaron Ebata, was interested in who deviated from this pattern of increasing competence. We looked at patterns of grade change for subgroups including those who reported significant periods of depression over the early adolescent period, getting into trouble at school, or both, as compared to those who reported neither of these problems. For the boys, the results are quite striking. (See next slide, Slide 24.) Boys who reported neither problem showed fairly stable grades over the period from sixth to eighth grade. Boys who reported getting into trouble at school showed a significantly different and more steeply declining slope of change. Those who reported depression declined even more steeply and those who reported both problems showed the very steepest rates of decline in grades over time. No such pattern was found for girls.

These results seem important for several reasons. First, they suggest that overall group patterns may be misleading by concealing

Mean GPA in Grades 6, 7, and 8th by Type of Adjustment Problems Reported



Slide 24

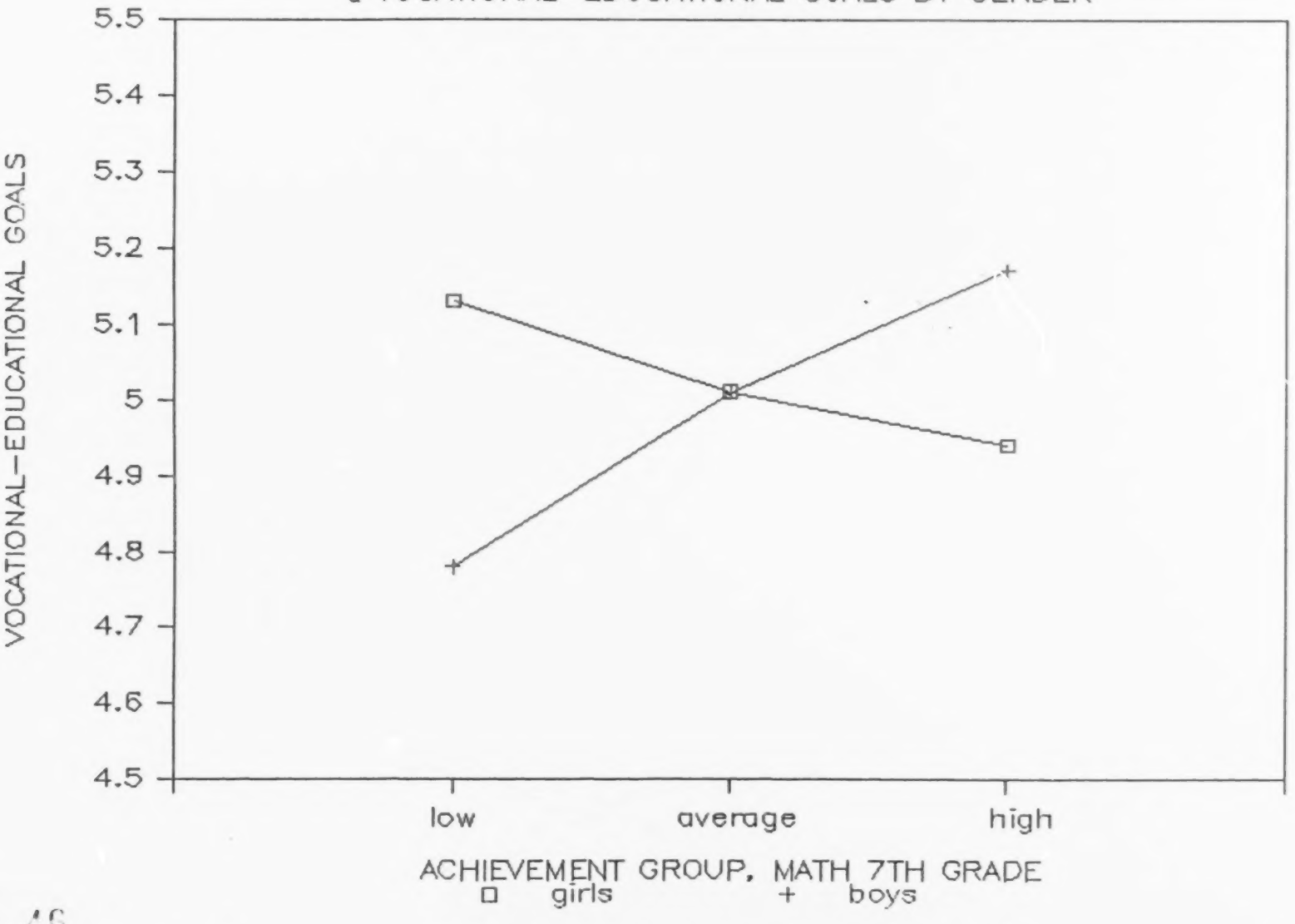
significantly different patterns of change among subgroups. Recall that the average course grade decline was significantly downward. These data also suggest that for specific subgroups, early adolescence is a critical transition. Although the groups were already different by the end of sixth grade, their rates of change become much more marked at this time, presumably setting those with declining grade trajectories off on patterns that will be difficult to redress. These results are also important in documenting the greater vulnerability of males to change, a finding that we have obtained repeatedly in this research.

These findings, however, tell us nothing about developmental change in girls. Indeed, they suggest that problems in girls are unrelated to their school achievement. The results just cited led us in two directions: Examination of achievement change in girls and examination of psychopathology in girls. Results in both areas are preliminary but fascinating. My students, Laura Roberts and Pamela Sarigiani, have been pursuing these questions.

Girls' achievement. It appears that high-achieving girls in seventh grade are in a bind, particularly if they are high-achieving in male-stereotyped areas such as mathematics and, to some extent, science. High IQ girls are the only group to show significant decline in school achievement between seventh and eighth grades, with mathematics grades dropping to the level of average IQ girls. In seventh grade, achievement and self-image are positively related for boys but unrelated or negatively related for girls (Slide 25). Other analyses revealed that girls whose achievement drops between seventh and eighth grades show increases in self-image (Slide 26). This contrasts sharply with the pattern seen in boys, who show the more expectable pattern of

RELATIONSHIP BETWEEN ACHIEVEMENT

& VOCATIONAL–EDUCATIONAL GOALS BY GENDER

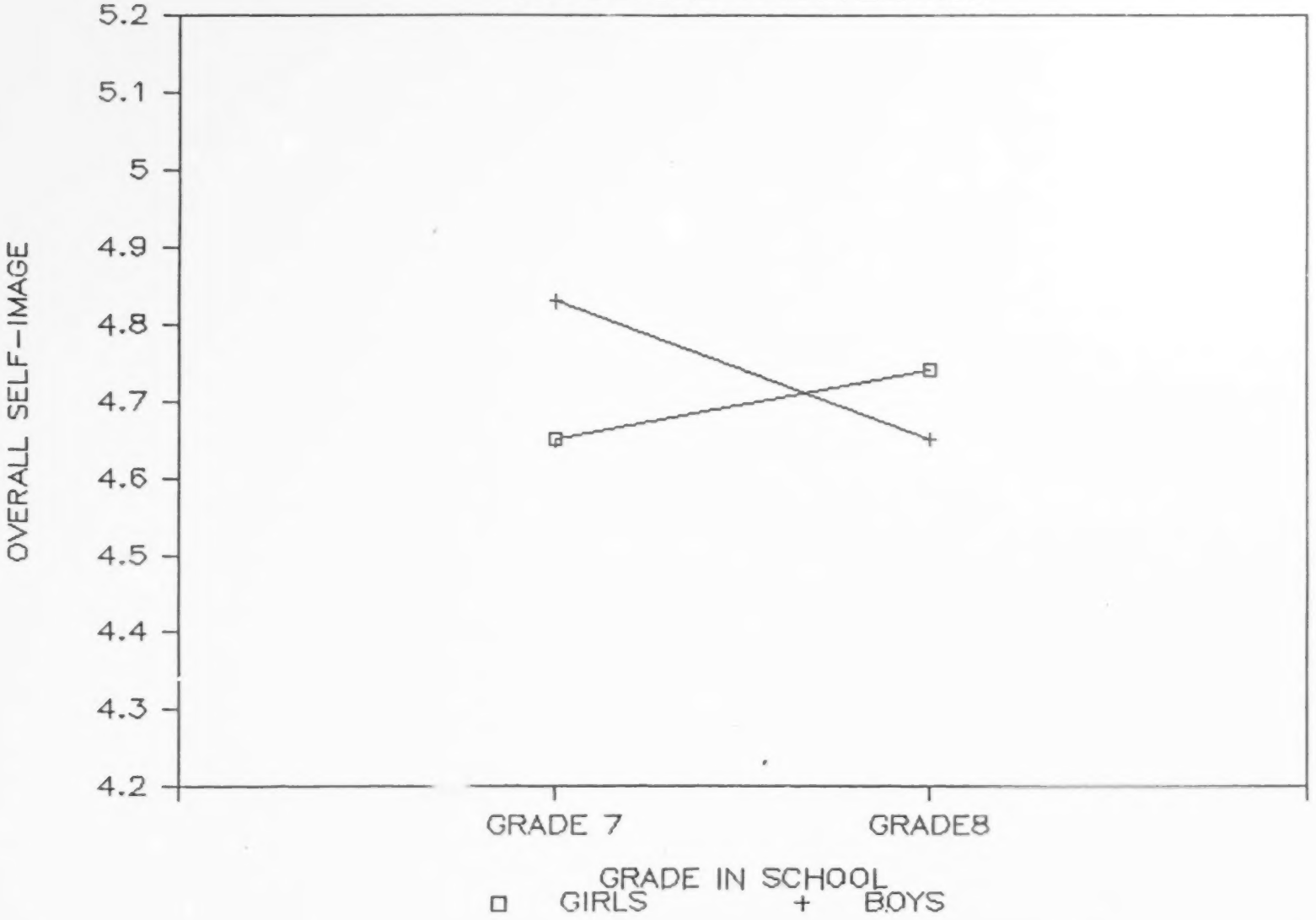


N = 242 P VALUE FOR INTERACTION = .007

Study 25

SELF-IMAGE OF BOYS AND GIRLS

WHO DECLINE IN MATHEMATICS



N = 21 P VALUE FOR INTERACTION = .04

Study 26

achievement declines being accompanied by decreases in self-image. Comparisons of covariate structure between gender and between grades within gender reveal significant change in covariate structure at seventh grade between boys and girls, with self-image and achievement much more strongly but differently linked at that time. Our most recent analyses suggest that concerns about popularity are mediating these relationships (Slide 27).

Developmental psychopathology in girls. Thus far, our analyses reveal that girls who report poor self-image and depression are more likely to be early maturers, adopted, and to have significantly better relationships with one parent than with the other. These are different correlates than the ones that appear to operate for boys and we are now examining the development of psychopathology in girls.

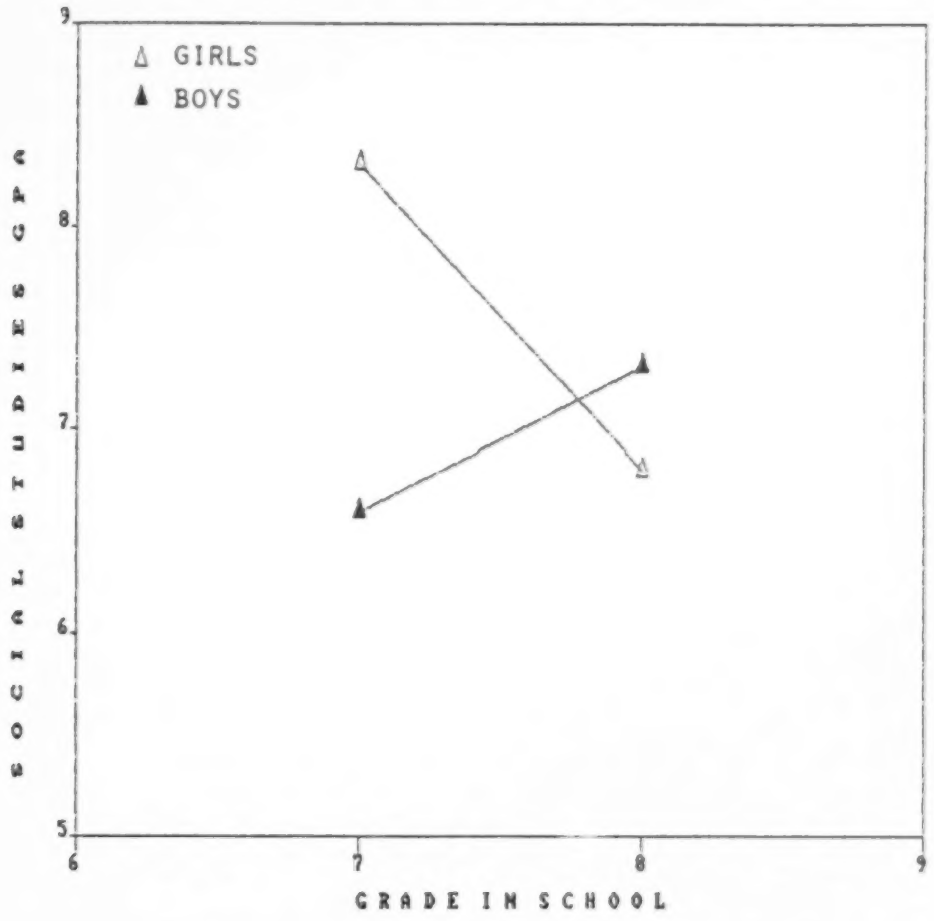
Conclusions

Although our analyses are not yet completed, we now believe that the original hypotheses were correct but with somewhat different form than originally expected. We believe that early adolescence constitutes a developmental transition, but not in the sense of dramatically different behavior for the group as a whole. Rather, the period is one in which subgroups of children begin to diverge in developmental pattern. Surprisingly to us, gender is not one of the characteristics identifying divergent patterns of change; rather, boys and girls differ in early adolescence in the relationships among changes.

It is irrefutable that this period consists of a great deal of change. Although most young people respond to this change as a stimulating challenge, some are unable to cope well; they begin to suffer and decline in various kinds of adaptive behavior. It is these

Slide 27

SOCIAL STUDIES GPA CHANGES
OF STUDENTS WHO VALUE POPULARITY



N = 19 P VALUE FOR INTERACTION = .03

FIGURE 12

latter groups who have been described previously in the clinical literature. Previous normative studies have overlooked these important subgroups and have made inferences that may not be true of any individual because they reflect the lumping of significant subgroups. Our results would suggest that both the normative and the clinical perspectives have validity; they simply refer to different groups of youngsters. Although divergence likely begins to occur prior to early adolescence, we believe that the many simultaneous changes experienced at this age cause significant divergence in patterns, setting the troubled youngsters on downward trajectories from which they may find it difficult to recover. We also see downward patterns in those who experience non-normative life changes such as parental divorce or death along with these normative developmental changes.

We found no support for gender divergence in linear patterns of change over time. What we have found, in more recent analyses, are significant changes in the patterns of covariation among areas of adjustment. Therefore, we now believe that gender-related change at this time is involved with the ways in which different constructs become linked, with very different patterns revealed by boys and girls. For example, high achievement, particularly in mathematics, becomes quite negative for girls in seventh grade. Throughout the grades studied, high achievement was related to high adjustment and poor achievement related to poor adjustment for boys. For girls, the patterns are distinctly different, and mediated by the great pressure on girls at this age for conformity and concern with popularity.

What does all this mean for programs for young adolescents, educational or other types? First, with all the changes taking place,

young adolescents clearly need continuing support and structure from schools, parents, and others. A great deal more can be done with all young people to minimize stress at this age; school-based prevention programs are likely to be especially effective. Second, young adolescents who are vulnerable to the normative developmental changes need extra help and intervention. Children with less support available to them as well as those already having difficulties are at particular risk. Third, programs need to be gender-specific. Boys, especially low achieving boys, are vulnerable to developing additional problems. Among girls, it is high achievers that are at risk. Our findings about girls and achievement suggest that specific interventions are needed to help them traverse this period without compromising their academic futures. Finding that it is high achieving girls who suffer poor self-image is reminiscent of the research on eating disorders; there also it is often high achievers, the "good girls," who develop problems. The potential waste of talent suggested by these findings requires some programmatic attention.

The most important result, however, from our work and that of others is that despite the difficulties and numerous changes confronting adolescents, most of them develop into healthy young people. Why then do we persist in thinking of all adolescents as troubled and troublesome? I suspect the answer lies with an ambivalence about young people. They are our future, yet we aren't ready to turn over the power. They are winding up while those with power--primarily middle aged adults--are winding down. Until we can confront this problem, we will fail to adequately provide for youth. We have invested heavily in programs for the elderly yet they have more disposable income than any

other age group. The young are expected to develop into productive citizens with only meager attention and great disdain. They need and deserve more, especially at school.

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